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für

Erziehung und Unterricht.

Herausgegeben

von der

Deutschen ev.-luth. Synode von Missouri, Ohio u. a. St.

Redigiert im Namen des Lehrerkollegiums des Seminars in Addison

von

Dir. E. A. W. Krauß.

Motto: Lasset die Kindlein zu mir kommen und wehret ihnen nicht, denn solcher ist das Reich Gottes.
Mark. 10, 14.

40. Jahrgang. — April.

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Evang.-Luth. Schulblatt.

40. Jahrgang. April 1905. No. 4.

Unsere Schulausstellung. — Neue Folge.

VI.

Elementary Arithmetic at the Louisiana Purchase Exposition.

It is evident even to the casual observer that carefully to review the Elementary School Exhibit at the Louisiana Purchase Exposition, with a view to ascertain the relative standing and excellence of our parochial schools, is not an easy task, requiring as it does time and patience. The arithmetic exhibit alone comprised many thousand papers, illustrating work from the primary to the grammar grades.

The difficulty of investigation was greatly augmented by the non-uniformity in the presentation of the work, to-wit: some schools had displayed the work of their best pupils only; others had exhibited the work of but one department of studies; still others had failed to send the work of the consecutive grades (many teachers and principals evidently do not appreciate the fundamental value of the first-grade work). Not a few of the volumes containing the work of public shools were without a statement as to circumstances, time used for daily instruction, number of pupils in class, number of papers on exhibition, and the average age.

To enable a correct and impartial judgment, it was necessary to establish a criterion possessing the following essential qualities: Correctness and lucidness of analysis, neatness and legibility of writing.

Then, also, the percentage of the papers on exhibition had to be taken into consideration. Many papers of both the American and the few European schools that had exhibited attained to a high standard, while others were quite devoid of the essential properties of good class-work.

With these preliminary remarks, I shall endeavor to give an idea of the work accomplished in the arithmetical department of the elementary schools of England, Germany, and especially America.

ENGLAND.

The schools of London, which are supported by the government, are classified into the Infant schools, which children attend below the age of six; the Junior; the Senior, attended by children below the age of twelve; and the Higher Elementary schools attended by pupils below the age of fourteen. Those desirous of pursuing their studies still further may do so at the Evening Continuation schools.

First Standard (Grade). The first grade constitutes the last year of the Infant department. The arithmetic work comprises simple examples of addition and subtraction, such as—

$$\begin{array}{r} 29 \\ -\,15 \\ \hline 14 \end{array} \qquad \begin{array}{r} 3 \\ 5 \\ 7 \\ 2 \\ 8 \\ \hline 25 \end{array}$$

Second Standard. The following examples may illustrate the work of this grade:—

$$\begin{array}{r} .6 \\ 50 \\ .8 \\ 13 \\ .9 \\ \hline 86 \end{array} \qquad \begin{array}{r} 94 \\ -\,48 \\ \hline 46 \end{array} \qquad \begin{array}{r} 28 \\ \times 3 \\ \hline 84 \end{array} \qquad \begin{array}{r} 4 \mid 76 \div 4 \\ \hline 19 \end{array}$$

The work is not extended beyond 100.

Third Standard. Syllabus: Compound Addition, Compound Subtraction, Simple Long Divison, Division by Factors. Teacher's statement: Average age of pupils, 9.0; number on roll, 62; percentage of attendance, 80.8. (Several cases of disease lowered the average.) Examples for illustration: My house and garden costs me £2·12·6 per week, and food costs me £1·11·9½ per week. How much can I save in four weeks, if I earn £20 in that time?

Solution:

£	s.	d.
2	12	6
1	11	9½
4	4	3½
×		4
16	17	2

£	s.	d.	
20	0	0	
−16	17	2	
3	2	10	*Ans.*

Fourth Standard. Syllabus: Reduction of Money, Weights, and Measures, Compound Multiplication, Compound Long Division. Teacher's statement: Number of pupils on roll, 58; per-

centage of attendance, 95.1; average age, 10.1. An example of this grade's work: I had 336 articles worth $4\frac{1}{4}$ d. each, and exchanged them for others worth $4\frac{1}{5}$ each. How many did I receive?

Solution:

$\frac{1}{5} = 17$ pence

336 at $4\frac{1}{4}$ d. each

4

1344

84

17 | 1428

84 *Ans.*

(See remark under Fifth Standard.)

Fifth Standard. Syllabus: Vulgar Fractions, Simple Proportion, Bills and Parcels. Teacher's statement: Number on roll, 65; percentage of attendance, 93.4; average age, 11.4. An example for illustration of work: I own $\frac{1}{3}$ of $\frac{9}{16}$ of a ship which is worth £4000. What is my share worth?

Analysis: I own $\frac{1}{3} \times \frac{3}{5} \times \frac{9}{16}$ of a ship which is worth £4000 which equals $\frac{3}{40}$. $\frac{3}{40} \times \frac{4000}{1}$ equals $\frac{300}{1}$. *Ans.* My share is worth £300.

Remark. According to the above statement, fractions are introduced in this standard; why, then, require the pupils of the *Fourth* Standard to operate with them, thereby exposing them to confusion and error?

Sixth Standard. Syllabus: Decimals, Vulgar Fractions (continued); Simple and Compound Interest; Simple Proportion (continued); Weights and Measures; Metric System; first four rules of Algebra. Teacher's statement: This class consists of two divisions with 33 and 31 pupils, respectively. Percentage of attendance, 79.7 and 98.2; average age, 12.5 and 13.0. An example of Interest. Find the simple interest on £250·12·6 for 4 years at $3\frac{1}{3}$% per annum.

Principals. Simple Int.

Analysis: As 100 : $250\frac{5}{8}$: : $3\frac{1}{3}$: 4

Times 1 : 4

$$\frac{401}{£\cancel{2005} \times 7 \times \cancel{1}} = 2807$$
$$\overline{16 \times \cancel{100}}$$
$$\cancel{25}$$
$$\cancel{5}$$

80 | 2807

£35 — $\frac{7}{80} \times 20 = \frac{\cancel{140}\ 7}{\cancel{80}\ 4}$ 4 | 7

1 — $\frac{3}{4} \times 12 = \frac{36}{4}$.

Ans. £35·1·9.

The above solution was found incomplete, being carried as far as $\frac{2807}{80}$ only. The correct answer, however, was given. The papers were not corrected.

Seventh Standard. Syllabus: Decimal and Vulgar Fractions (continued); Proportion (continued); Areas, Paperings, etc.; Algebra: Factoring; Square and Cube Root. Teacher's statement: This class is taught in two divisions with 19 and 25 pupils, respectively; percentage of attendance, 98.1; average age, 11.7 and 13.8. An example of evolution:

$$
\begin{array}{r|l}
72\cdot47\cdot11\cdot69 & 8513\ \textit{Ans.} \\
64 & \\
\hline
165 \mid 8\,47 & \\
\quad 8\,25 & \\
\hline
1701 \mid \quad 22\,11 & \\
\quad\quad 17\,01 & \\
\hline
17023 \mid \quad 5\,10\,69 & \\
\quad\quad 5\,10\,69 & \\
\hline
\end{array}
$$

Pupils that are graduated from the seventh grade may attend the Evening Continuation School, and thence enter the high school.

Eighth Standard. Syllabus: Compound Proportion; Simple and Compound Interest (reviewed); Percentages; Averages; Stocks, Root, Algebra: Quadratic and Simultaneous Equations; Euclid: Book I.

The time per week devoted to the instruction of arithmetic in the different standards is as follows:

Standard	I,	2	hr.	45 min.
"	II,	2	"	50 "
"	III,	3	"	15 "
"	IV,	3	"	15 "
"	V,	3	"	20 "
"	VI, VII, VIII, the same as V.			

Mental arithmetic is taught 10 minutes daily in all classes.

Notwithstanding the fact that the papers on exhibition are good, it was impossible to draw accurate conclusions from them as to the excellence of England's schools, since only four papers of each of the lower grades and but two of the higher grades were displayed. This was the extent of the arithmetic work from England.

The second reason for the above statement may be extracted from the following incident.

After a careful perusal of the papers, I turned to the attendant and commented on the beautiful writing.

"Yes, very good," said the attendant.

"Wonder if it is genuine," I queried.

"What do you mean?"

"If the pupils wrote it."

"Why, certainly!"

"I doubt it. Compare carefully the lines, the figures, the letters, and judge if children of the age of seven or eight years could write so uniformly."

"Well, it appears to me you are right. The writer seems to have tried to imitate the handwriting of a child."

(At this juncture the attendant called the General Commissioner.)

Attendant: "See what we discovered. This has apparently been written by a teacher."

General Commissioner (with a London dialect): "No, what is the matter with you?! Can't you see that there is a great difference between this H" (pointing to one paper) "and that H" (pointing to another paper)?

I: "Yes, but the difference is merely in the size, not in the formation of the letters."

General Commissioner: "Do you think the London people would do anything like that?"

I: "Well, I am sorry, but it is too apparent. I shall have to report it as I found it."

The General Commissioner, unable to refute the argument, left abruptly.

Deutſchland.

Da die verſchiedenen Gattungen der Elementarſchulen Englands (Londons) aufgezählt worden ſind, ſo dürfte es manchem Leſer des Schulblattes nicht minder intereſſant ſein, die Namen der deutſchen Schulgattungen, ſoweit ſie von Kindern unter vierzehn Jahren beſucht werden, aufgeführt zu ſehen.

Das Gymnaſium hat neun einjährige Kurſe. Das Mindeſtalter für die Aufnahme in die unterſte Klaſſe (Sexta) beträgt neun Jahre; vorausgeſetzt wird der etwa dreijährige Beſuch einer Elementarſchule. Mit dem Eintritt in die Sexta beginnt auch der Unterricht im Latein.

Das Reformgymnaſium unterſcheidet ſich inſonderheit von dem Gymnaſium dadurch, daß der Unterricht des Lateiniſchen erſt in der Untertertia oder nach Vollendung des zwölften Lebensjahres der Schüler beginnt. Ende 1902 gab es in Berlin fünfzehn ſolcher Gymnaſien mit 7093 Schülern.

Die preußiſchen Mittelſchulen dienen allgemeinen Bildungszwecken und gehören weder zu den höheren Schulen, noch zu den öffentlichen Volksſchulen, noch zu den Fachſchulen.

Die höheren Klaſſen einer Mädchen- ſowie einer Knaben-Mittelſchule in Stettin hatten neben andern auch mathematiſche Arbeiten für die Weltausſtellung geliefert. Weil aber die meiſten Aufgaben dem metriſchen Syſtem angehörten, ſo nahm ſie Schreiber dieſes nicht in ſein Notizbuch auf.

Berliner Gemeindeschulen. Diesen Namen führen diese Schulen seit 1870. Sie gewähren den Kindern aller Volksklassen Aufnahme und unentgeltlichen Unterricht. Im Jahre 1902 wurden in Berlin in 258 Gemeindeschulen 213,699 Schulkinder unterrichtet. Seit dem 1. Oktober 1902 sind sie achtklassig geworden. Zwei dieser Schulen hatten ausgestellt, wie Herr Direktor Krauß bereits mitgeteilt hat.

Rechnungen, die von Schülern der dritten Klasse — nach amerikanischer Bezeichnung des sechsten Grades — ausgeführt wurden, finden hier Platz.

1. Reduziere den unechten Bruch $\frac{985}{12}$ zu einer gemischten Zahl.

Ausführung: $985 : 12 = 82\frac{1}{4}$.
25
1

2. Suche den größten gemeinschaftlichen Nenner von 189 und 504.

Ausführung: $189 = 3 \times 63$
" $= 3 \times 3 \times 21$
" $= 3 \times 3 \times 3 \times 7$
Ebenso: $504 = 2 \times 252$
" $= 2 \times 2 \times 126$
" $= 2 \times 2 \times 2 \times 63$
" $= 2 \times 2 \times 2 \times 3 \times 21$
" $= 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7$.

Die Primfaktoren von 189 und 504 sind 3,3,7; darum ist 63 der größte gemeinschaftliche Nenner.

Die einzige einklassige Volksschule, die ausgestellt hatte, war die zu Datum-Nienhöfen in der Provinz Schleswig-Holstein. In ihr wurden im Jahre 1902 28 Knaben und 22 Mädchen vom sechsten bis zum fünfzehnten, bezw. vierzehnten Lebensjahre in einem Schulraum unterrichtet. Die Schule will die Kinder befähigen, einen bürgerlichen Beruf zu ergreifen, zu dem keine höhere Schulbildung erforderlich ist.

Der Unterricht wird in drei Stufen: Unterstufe (zwei Jahrgänge), Mittelstufe (drei Jahrgänge) und Oberstufe (die letzten Jahrgänge), erteilt.

Auf die beiden ersteren fallen vier, auf die letztere fünf Stunden wöchentlicher Rechenunterricht.

Dem Lehrplan wurden folgende Angaben entnommen:

A. Unterstufe.

1. Jahrgang: Numerieren, Notieren, Addition und Subtraktion mit benannten und unbenannten Zahlen im Zahlenkreis von 1 bis 20.

2. Jahrgang. Alter: sieben Jahre. Multiplikation und Division im Zahlenkreis von 1 bis 20. Addition und Subtraktion im Zahlenkreis von 1 bis 100. Exempel: $40+5=45$. $49-2=47$.

B. Mittelstufe.

1. Jahrgang: Multiplikation und Division im Zahlenkreis von 1 bis 100. Die beiden ersten Spezies im Zahlenkreis von 1 bis 1000.

2. Jahrgang: Die vier Spezies im unumschränkten Zahlenkreise. Reduktion und einfache Regeldetri. Vorbereitung der Bruchrechnung, Münzen, Maße und Gewichte.

Exempel: Wenn jemand in einem Jahr M. 340 für Miete bezahlt, wieviel beträgt das auf ein Vierteljahr?

Lösung: Wenn jemand in einem Jahr M. 340 bezahlt, dann bezahlt er in einem Vierteljahr

$$\begin{array}{r} 340 \div 4 = 85 \\ \hline 320 \div 4 = 80 \\ 20 \div 4 = 5 \end{array}$$

Also bezahlt er in einem Vierteljahr M. 85.

C. Oberstufe.

1. Jahr: Gemeine und Dezimalbrüche.
2. Jahr: Die bürgerlichen Rechnungsarten.
3. Jahr: Lehre von den Linien, Winkeln und Flächen.
4. Jahr: Die regelmäßigen Körper. Algebra.

Schüler des zweiten Jahrgangs der Oberstufe hatten unter andern folgende Aufgabe gelöst: Wie oft sind 7 Stunden 30 Minuten in 4 Tagen 16 Stunden und 30 Minuten enthalten?

Lösung: 450 Minuten : 6750 Minuten = 15mal.

4500	= 10 "
2250	= 5 "
2250	

Das Heft eines dreizehnjährigen Kindes enthielt folgendes Exempel: 16 Maurer arbeiten 27 Tage an einem Bau. Wie viele Maurer werden damit in 24 Tagen fertig?

Lösung (nicht ausgeführt): 1 Maurer 16×27 Tage $= 432$ Tage. Wenn der Schüler das Produkt durch 24 geteilt hätte, dann hätte er ja die richtige Antwort bekommen. Wahrscheinlich war das seine unausgeführte Absicht.

Wäre nachstehende Lösung nicht einfacher? Wenn ein Bau in 27 Tagen von 16 Maurern vollendet wird, dann wird er in 24 Tagen von $\frac{27}{24}$ mal 16 Maurern vollendet $= 9 \times 2$ oder 18 Maurern.

Ein Schüler aus der obersten Abteilung (Alter 14 Jahre) hatte folgendes Exempel gelöst: Wie viele Interessen bringen 720 Mark in 3 Jahren, wenn der Zinsfuß $3\frac{1}{2}$ % beträgt?

Wenn 100 Mark $3\frac{1}{2}$ Mark bringen, dann bringen 720 Mark $7\frac{1}{5} \times 3\frac{1}{2}$ Mark, welches 25.20 Mark beträgt. Wenn die Interessen in 1 Jahr 25.20 Mark betragen, dann betragen sie in 3 Jahren 3×25.20 oder 75.60 Mark.

Der Lehrplan dieser einklassigen Volksschule enthält neben den gewöhnlichen Lehrgegenständen auch Turnen für die Knaben und weibliche Handarbeiten für die Mädchen.

Die Stunden auf die einzelnen Gegenstände und Stufen verteilen sich wie folgt:

	Unterstufe.	Mittelstufe.	Oberstufe.
Religion	4	5	5
Deutsch	11	10	8
Rechnen	4	4	5
Zeichnen	—	1	2
Realien	—	6	6
Singen	1	2	2
Turnen, Handarbeit	—	2	2
	20	30	30

OUR PUBLIC SCHOOLS.

The "Monographs on Education in the United States" inform us that the rural school holding winter sessions only from 60 to 80 days, and taught by a makeshift teacher, who for the rest of the year turns his energies to some other employment, is as yet not a mere legend of the past, but is still to be found in some thinly populated districts. And, indeed, the work produced by some schools seems to verify this assertion. The poorly written teacher's statements, the incomplete analysis of the problems, and the poor writing of the pupils attested all but ideal schools.

In one instance the teacher's statement showed that there were three pupils, 12 and 13 years of age, in the "sixth grade," receiving instructions of $1\frac{1}{4}$ hours per week. An example for illustration: $28 \times 1{,}000{,}000$. Divide product by 1000 and by 100.

Happily, the number of these schools is not very large, and we sincerely hope that these also may in the very near future be roused out of their lethargy and quickened to the new life which has permeated the rural school. The work in general from the schools of villages and towns gave evidence of a higher standard of class-work.

The investigation of a *Waltham, Minn.*, school revealed papers from second-grade pupils, age 8 years, with expressions like perimeter, oblong, area, etc.

This is very suggestive of a toast on good judgment reading thus, "May opinions never float on the sea of ignorance." Make haste slowly!

In comparison, the papers of the higher grades of the same school sparkled with less gems of that nature. The writing was below the average.

Niagara, Wis., exhibit. Ages of pupils of first grade, 7 to 11 years; second grade, 7 to 12; third, 9 to 13; fourth, 9 to 13; sixth, 11 to 15; eighth, 14 to 17. The teacher's statement gave no information as to the cause of the great variation in the ages of the pupils in a class.

Simple examples of interest constituted the eighth-grade work, while the sixth grade had prepared papers on examples like the following: How much must be paid for 1 dozen books at $\$1.37\frac{1}{2}$ apiece?

The graded shools of the large cities have a regular course of study, uniformity of text-books, and proper classification of pupils, and about the right number of pupils in class.

Milwaukee.

First Grade. Number of pupils in class, 35. Class instruction, 15 minutes per day. Average age, 7 years. Examples of Addition and Subtraction with numbers of one digit. Nearly all the class-work of the lowest, and part of that of the second grade, is mental, based upon measurement and comparison.

Second Grade. Number of pupils, 27. Class instruction, 32 minutes daily. Average age, 8 years. Work: Abstract and concrete problems embracing the four fundamental rules of arithmetic and involving numbers from 1 to 850. In multiplication and division the multiplicand and the divisor consisted of one digit.

Third Grade. Number of pupils, 33. Class instruction, 32 minutes daily. Average age, 10 years. One example in addition with numbers of four places, and borrowing, were the only indications of advancement.

A comparison of second and third grade work:

2d.	847	768	2 | 846	
	— 516	× 2		
	331,	1536,	423.	
3d.	9481	791	95	
	3232	— 634	× 4	
	1221			Division — not any.
	13934,	157,	380.	

The example of addition of the second grade consisted of seven digits in one column.

Fourth Grade. Number of pupils, 47. Class instructions in this and the following grades, 40 minutes daily. Average age, 11 years. Class-work: Long Division, Simple Reduction, and Bills.

Fifth Grade. Number of pupils, 49. Average age, 12 years. Class-work: Factors, Prime Factors, Fractions.

Sixth Grade. Number of pupils, 42. Average age, 13. Class-work: Decimal Fractions.

Seventh Grade. Number of pupils, 35. Average age, 14 years. Class-work: Changing Decimals to Common Fractions, Percentage, Interest, including the converse operations.

Eighth Grade. Number of pupils, 29. Average age, 15 years. Class-work: Proportion, Profit and Loss, Square Measure, Square Root, Algebra.

SPRINGFIELD, MASS.

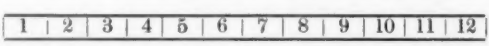
The public school of this city is regarded as one of the best and most advanced in the East. The course of study is divided into nine grades, *in which the formal teaching of Number is not introduced until the second grade.* The early work in Number is wholly oral and is based upon measurement and comparison. In the latter half of the second school-year written expression of number is taught. Systematic work begins with the study of some well-known unit of measure—foot, dime, quart, or dozen; *e. g.:*

My [Picture] picture is a little more than a foot long.

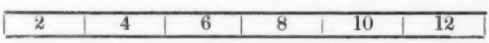
This ——— line is about half a foot long.

This is our mouse-cage. (Drawing of a cage.)

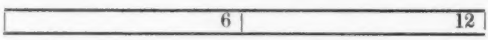
It is two feet long and one foot wide.



A foot is 12 inches long.

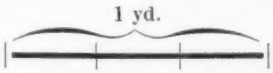


A foot is equal to six two inches.



A foot equals two six inches.

The yard as the Unit of Measure.—Mamma buys cloth, lace, braid, and ribbon by the yard.



There are 3 feet in a yard. Irene's hair-ribbon is $\frac{1}{2}$ yard long. A yard is two feet more than a foot. A foot is two feet less than a yard.

If a spider walks around the edge of a 3 inch square, how many inches will it travel? — The spider will travel 12 inches.

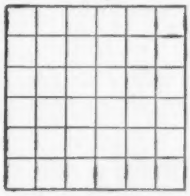
Draw a watch that will show when you get up in the morning, when you start for school, when school is called in the afternoon.—

Third Grade. Average age, 9 years. Review of second year's work. Comparisons of surfaces, quantity, capacity, time, United

States Money, are added. Estimations of distances and length. The cubic inch. Contents of square prisms by actual measurement. Combinations from 16 to 100. Fractions from $\frac{1}{2}$ to $\frac{1}{9}$. Addition, numbers of two columns. Subtraction, numbers of two figures in the minuend and the subtrahend. Multiplication, numbers of three digits by one digit. Division, two digits by one.

Example of work: A square rug is six feet on one side; what is its area?

Rug.



6 feet equals the length of one side.

6 square feet equals one row; 6, number of rows.

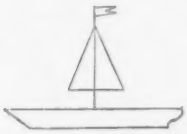
6 square feet $\times$ 6 equals 36 square feet — equals the area.

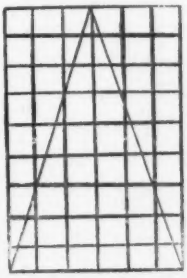
Many similar illustrations of class-work were given.

Fourth Grade. Average age, 10 years. Development of ideas of right, acute, obtuse angles, illustrated by colored paper. Altitude. Area of squares and rectangles whose dimensions are expressed by fractional numbers, as $3\frac{1}{2} \times 3\frac{1}{2}$, etc. Cubic contents of a square prism. Writing numbers to 10,000. Roman Numbers. Drill in Addition and Subtraction with three-place numbers. Multiplication, numbers of three places by two places. Division, three-place numbers by one- and two-place numbers.

An example of the work of this class:

My boat has a sail which is an isosceles triangle. The base line of this triangular sail measures 6 feet. Its altitude measures 9 feet. How many square feet in my sail?





6 = number of square feet in short row.

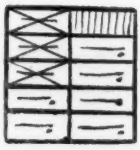
9 = number of square feet in long row.

$6 \times 9 = 54$ = number of square feet in an oblong sail 6×9 feet. Since my sail is a triangle it equals $\frac{1}{2}$ of 54 square feet, or 27 square feet. There are 27 square feet in my sail.

Fifth Grade. Age, 11 years. Percentage. Writing of numbers to 1,000,000. Simple Interest. Reduction of Compound Numbers.

Fractions. Cubes and Prisms. Introduction of Decimal Fractions. An illustration of the latter:—

Add .5 and .3 = .8.



Subtract .3 from .9 = .6.

The illustrations of examples of United States Money and Percentage showed no new features.

Sixth Grade. Age, 12 years. Decimals, Profit and Loss. Interest. Promissory Notes and Receipts. Multiplication of Fractions. Surfaces.

Example of class-work: A house that cost $3600 was sold at a gain of $16\frac{2}{3}\%$. What was the selling price?

Conditions: $3600 = cost of house. $16\frac{2}{3}$ = gain per cent.

Question: What was the selling price?

Solution: $16\frac{2}{3}\%$ of $3600 = $600, gain. $3600 + $600 = $4200, the selling price.

Seventh Grade. Age, 13 years. Trade Discount. Simple Proportion. Custom House Business. Taxes. Longitude and Time. Cylinders, surface, and volume.

Example of work: Find the net price of a bill of goods invoiced at $1100, from which discounts of 10% and 25% were allowed.

First method:

100% — 20% = 80%
80% of $1100 = $880
100% — 25% = 75%
75% of $880 = $660 net price.

Second method:

$1100
.80
$880.00
.75
44 00
616 0
$660.00 net price.

Eighth Grade. Age, 14 years. Fire Insurance. Bank Discount. Square Root. Measurement of Angles.

The following note had been written for exhibition.

$350.86. Springfield, Febr. 23, '04.

Three months after date, I promise to pay D. Graham, or order, Three hundred fifty and $\frac{86}{100}$ Dollars. Value received.

Discounted, March 16, '04 at 6%. Browns.

An explanation of bank discount written by the pupils of this grade is indicative of an exceptionally clear and thorough comprehension of the subject.

"If Mr. B. believes he can pay this sum of money in three months' time, and Graham is willing to wait that long, Mr. B. can write a prom. note stating, that he will pay the note at a future date. This note becomes due at a future date of maturity. Mr. G. holds the note. He may keep it in his possession until the date of maturity, and then go to Mr. B. and collect the note. Secondly, he may take the note to a bank and have the bank collect it for him by paying the bank a small fee for so doing, a few days before it becomes due. If Mr. G. needs the money before the note becomes due, he can have the money from the bank. The bank takes out the interest from the sum or face of the note. If Mr. G. is willing to receive less than the face of the note, he can do this. The bank will reckon the int. between the date Mr. G. takes it to the bank and the date of maturity. We call this Bank Discount. The bank pays Mr. G. the sum of money after subtr. the B. D. from the face. We call what Mr. G. receives the proceeds. When this note is due the bank collects it from Mr. B. The bank has on hand the note, and has paid out the proceeds. The bank will make money on this note by collecting the full amount or the face of the note. The bank makes the bank discount on this note. Suppose Mr. G. wants the money March 16, '04. He takes it to the bank and has it discounted at 6%. We call this the date of discount. The bank reckons the interest on the exact number of days, which equals 57 days. The face of the note, or $\$350.86 \times \frac{57}{360} \times .06 = \$3.3331\frac{7}{10}$ = bank discount. $\$347.527$ = proceeds."

Ninth Grade. Age 14, 15, and 16 years. Stocks and Bonds. Partial Payments. Problems in Mensuration. Algebra.

The average number of pupils in a room is 47, which seems large for "a typical Yankee school." — In the Malden, Mass., schools the average number of pupils in a class is 40.

The Schools of Boston, Mass.

The curriculum of the schools of Boston does not differ materially from that of the Springfield, Mass., schools. They also have nine grades. The following problem of Interest was copied from eighth-grade papers because of the construction of the analysis:—

What is the amount on $1200 at 5% from Jan. 15, 1900, to Sept. 24, 1903?

Jan. 15, 1900, to Jan. 15, 1903 = 3 years.
Jan. 15, 1903, to Sept. 15, 1903 = 8 months.
Sept. 15, 1903, to Sept. 24, 1903 = 9 days.
Find the amount on $1200 for 3 yrs. 8 mo. 9 da.

$60	= interest	for	1 yr.	at	5%.
$180	= "	"	3 yr.	"	5%.
$20	= "	"	4 mo.	"	5%.
$15	= "	"	3 mo.	"	5%.
$ 5	= "	"	1 mo.	"	5%.
$ 1	= "	"	6 da.	"	5%.
$.50	= "	"	3 da.	"	5%.
$ 221.50	= interest for 3 yr. 8 mo. 9 da.				
$1200.00	= principal.				
$1421.50	= amount.				

New York City Schools.

The average number of pupils in a class in the New York schools is 43. The ages of the pupils of the first grade are between 6 and 7 years, while those of the eighth grade range from 13 to 15 years.

The time of daily instruction in the different grades is as follows: First grade, 20 minutes; second and third grades, 30 minutes; fourth grade, 41 minutes; fifth grade, 39 minutes; sixth grade, 40 minutes; seventh and eighth grades, 32 minutes.

Some examples to show the method of the fundamental work:—

Ex. 1. From the pile of splints on your desk count out 14. Number these 14 splints on your paper, writing from 1 to 14.

Ex. 2. Score (with splints) 3, 5, 8, 4, 9, 10. Place on paper, writing underneath each score the figure it represents.

3 5 8 4 9 10

Ex. 3. Count out 7 splints in one pile and two in another. How many more in the pile of 7 than in the pile of 2? The child wrote: "5 more."

The work of the second grade was similar to that of the first, but involved numbers to 100, the first three fundamental rules being applied. In this grade, as well as in the first, concrete problems are used.

The third-grade work on exhibition consisted partly of exercises in equal parts, or equivalent fractions, thus: What is the difference between $\frac{1}{2}$ of 16 and $\frac{3}{4}$ of 16?

An example of fifth-grade work: — A farmer sold $\frac{1}{4}$ of his sheep, and $\frac{1}{6}$ died; he then had 154; how many had he?

Solution: $\frac{1}{4} = \frac{3}{12}$, $\frac{1}{6} = \frac{2}{12}$, both $= \frac{5}{12}$.

$\frac{12}{12} - \frac{5}{12} = \frac{7}{12}$ left.

$\frac{7}{12} = 154$.

$\frac{1}{12} = \frac{1}{7}$ of $154 = 22$ sheep.

$\frac{12}{12} = 22 \times 12 = 264$ sheep at first.

The seventh grade had solved simple algebraic equations, thus substantiating the opinion that pupils of this grade could successfully operate with them.

Example: A man bought a horse, carriage, and harness for $350. The horse cost $5 more than the carriage, and the carriage cost twice as much as the harness. Find the cost of each.

Solution:

Let x = cost of harness.
$2x$ = cost of carriage.
$2x + \$5$ = cost of horse.
$x + 2x + 2x + \$5 = \$350$.
$5x = \$350 - \$5$.
$5x = \$345$.
$x = \$69$ cost of harness.
$2x = \$138$ cost of carriage.
$2x + \$5 = \$143$ cost of horse.

The eighth grade had prepared papers on examples of Longitude, Time, Geometry, and Algebra.

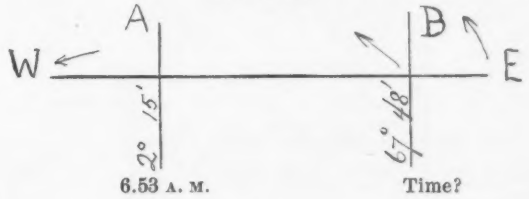
An example of Longitude and Time:—

Longitude of A = 2° 15′ W. Time, 6:53 A. M.
" of B = 67° 48′ E. Time?

Given: Longitude of two places and time of one place.

Find: Time at second place.

DIAGRAM.



Difference of longitude:—

67°	48′ = B
2°	15′ = A
69°	63′
1	
70°	3′ = diff. in longitude.

Difference in time:—

4 hr. 40 min. 12 sec.

15° | 70° 3′ 3′

60 15° | 600 min. | 40 min.

10° 60

× 60 3

600 min. × 60

15 | 180 sec. | 12 sec.

180

4 hr. 40 min. 12 sec. = diff. in time.

Hour of day at given place: A = 6:53 A. M. = 6 hr. 53 min. B has the later time because it is the farthest east, and it is 4 hr. 40 min. 12 sec. later.

Time at B:—

6 hr. 53 min. Time at A.
4 hr. 40 min. 12 sec.

11 hr. 33 min. 12 sec. *Ans.* 11.33.12 A. M.

The slant or Standard Business speed style of penmanship is taught in the higher grades.

Remark. In order to acquaint themselves with the proceedings in the courtroom, and to train themselves in the obedience to social order, the pupils of this grade have established a tribunal.

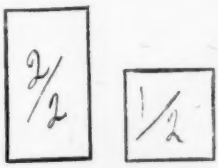
Chicago Schools.

No teacher's statement had been prefixed to the work of these schools.

First Grade. The pupils of the first grade are drilled in Addition, Subtraction, Multiplication, and Division in numbers to 10, and acquire also some knowledge of fractions. Examples showing mode of teaching fractions:—

1.

2. A man had 24 cows, he sold ½ of them. How many cows had he left? Illustration:



Second Grade. Average age, 8 years. The pupils of this grade are taught ratio by means of squares of papers cut according to requirements. The fundamental rules are applied to numbers below 1000.

Third Grade. Average age, 9 years. The pupils of this grade had displayed examples in Addition with numbers of 5 places; Subtraction, with numbers of 6 places; Multiplication, with multiplicand of 3 places. — The work of the former grades was continued.

Fourth Grade. Average age, 10 years. The papers of this grade showed examples of Reduction.

Example: At $ .32 a pound, what will 32 pounds 8 ounces of butter cost?

Solution:

32 lb. 8 oz. = 32½ lb.
32½ lb. : 1 lb. = 32½ ×
32½ × $.32 = $10.40. *Ans.*

Fifth Grade. Average age, 11 years. To illustrate in part the work of this grade the following problem was selected: A watch and chain cost $190. The chain cost ⅜ as much as the watch. Cost of each?

⅞ = cost of watch.
⅜ = cost of chain.
1⅜ = cost of both.
⅞ = 7/10 of 1⅜.
7/10 of $190 = $133 cost of watch.
⅜ = 3/10 of 1⅜.
3/10 of $190 = $57 cost of chain.

Sixth Grade. Average age, 12 years. The papers of this grade showed plans of dwelling houses. The size of the different rooms and halls being given, the pupils were required to find the number of square yards of plaster, and the cost of plastering them. A diagram of a section of land and certain fractional sections were also given.

Seventh Grade. Age, between 12 and 16 years. Examples of Interest, Commission, Mensuration of Angles, and Evolution constituted the work of this grade.

Note: Date, June 19, 1903. Principal, $2500. Time, 90 days. Rate, 9%.

Principal = 100% — $2500.
Interest = 9% — $56.25.
Amount = 102½% — $2556.25.
$2500 9 ÷ 1/4 = $56.25 Interest.
$2500 + $56.25 = $2556.25 Amount.

Eighth Grade. Age, 14, 15, and 16 years. The work of this grade comprised problems of Measurements of Volumes and Prisms, Cylinders, and Spheres; Mensuration of Lines, Surfaces and Solids. Algebra.

Example of the latter: $9a^2 - 4c^2 = 3a - 2c$. The product of the sum and difference of two quantities is equal to the difference of their squares.

LUTHERAN SCHOOLS OF THE MISSOURI SYNOD.

THE WORK OF A CHICAGO PAROCHIAL SCHOOL.

First Grade. Age, 6 years. One division. Daily class instruction, 60 minutes. Number of pupils, 63.

Subject: Addition and Subtraction of numbers from 1 to 100.

Examples:

$$\begin{array}{r} 9 \\ 2 \\ +\,14 \\ \hline 25 \end{array} \qquad \begin{array}{r} 80 \\ -\,30 \\ \hline 50 \end{array}$$

Objects are used in teaching the idea and names of numbers, and also in obtaining the elementary results.

Second Grade. Age, 7 years. Number of pupils in class, 66. Daily instruction, 60 minutes. One division.

Subject: Addition, Subtraction, and Multiplication of numbers not exceeding 1000.

Examples:

$$\begin{array}{r} 386 \\ 7 \\ 85 \\ 898 \\ \hline 1376 \end{array} \qquad \begin{array}{r} 728 \\ -\,365 \\ \hline 263 \end{array} \qquad \begin{array}{r} 486 \\ \times\ 7 \\ \hline 3402 \end{array}$$

The written work is supplemented by oral exercises.

Third Grade. Age, 8 years. Number of pupils, 70. Daily instruction, 60 minutes.

Subject: The four fundamental rules applied to abstract numbers not limited by a certain period. The following problems will give an idea of the work in the second half of the year.

$$\begin{array}{r} 3684 \\ 5276 \\ 9897 \\ 4379 \\ 5658 \\ 9765 \\ 3497 \\ 6438 \\ 9385 \\ 4675 \\ \hline 62634 \end{array} \qquad \begin{array}{r} 7603052 \\ -\,4354604 \\ \hline 3248448 \end{array} \qquad \begin{array}{r} 7685 \\ \times\ 579 \\ \hline 69165 \\ 53795 \\ 38425 \\ \hline 4449615 \end{array}$$

$$753 \mid 95364 \mid 126$$

$$\begin{array}{r} 752 \\ \hline 2016 \\ 1504 \\ \hline 5124 \\ 4512 \\ \hline 612 \end{array}$$

The pupils are *drilled daily in oral exercises.*

Fourth Grade. Age, 9 years. Number of pupils, 70. Daily class instruction, 48 minutes.

Subject: Common fractions. — Many abstract exercises are used to habituate rapid and accurate thought. An example of class-work: Bought $2\frac{1}{2}$ lb. of coffee at $\$\frac{3}{10}$ a lb. What was the cost?

Solution: $2\frac{1}{2} \times \frac{3}{10}$

$$\frac{5}{2} \times \frac{3}{\cancel{10}_{2}} = \frac{3}{4} \times \frac{\overset{25}{\cancel{100}}}{1} = \frac{75}{1} \text{ or } 75 \text{ ct.}$$

Fifth, sixth, and seventh grades with 32, 25, and 13 pupils, respectively, are taught by the same teacher. Daily class-work, 60 minutes.

Fifth Grade. Reduction of Denominate Numbers, Weights, Measures, Money; Decimal Fractions.

To illustrate method of reduction: Change 616,346 sec. to higher denominations.

Solution: 60 | 616346 sec. — 26 sec. remainder.
60 | 10272 min. — 12 min. "
24 | 171 hr. — 3 hr. "
7 — 7 da.

Ans.: 7 da. 3 hr. 12 min. 26 sec.

Sixth Grade. Age, 11 years.

Subject: Mensuration, Percentage, and Interest, including converse operations.

A problem of interest illustrated both the inductive and mechanical methods of analysis: $19.20 is paid for the use of $960 for 90 days. Find the rate of percentage.

Solution I: Since the interest for 1 year at 1% equals 1% of the principal, for 90 days or ¼ year it equals ¼% of the principal. ¼% of $960 equals $2.40, and $19.20, which equals 8 × $2.40, is the interest at 8 times 1%, or 8%. *Ans.*

Solution II: 3 mo. int. = $19.20.
12 mo. int. = $\frac{12}{3}$ of $19.20
which = $76.80. $960 | 76.80
8%. *Ans.*

Seventh Grade. Age, 12 and 13 years.

Subject: Partnership, Commission, Insurance, Trade Discount, Taxes, Longitude, etc.

An example of Partnership: A. invested $8000, and B. $9000 in trade. The profits the first year are $10,800, of which C. gets $4000. What was C.'s capital, and what are A.'s and B.'s profits, respectively?

Known capital invested $ 8000, and
9000, equals
$17000.

The profits the first year are $10,800, of which C gets $4000. This leaves it $6800 for A. and B.

A.'s profits are $\frac{8000}{17000,}$ or $\frac{8}{17}$ of $\overset{400}{\$6800} = \$3200.$

B.'s profits are $\frac{9000}{17000,}$ or $\frac{9}{17}$ of $\overset{400}{\$6800} = \$3600.$

C.'s capital equals $\frac{4000}{6800,}$ or $\frac{10}{17}$ of $\overset{1000}{\$17000} = \$10000$ cap.

Milwaukee.

The teachers of the grammar grades of one of the schools of this city, which had exhibited papers from its seven consecutive grades, had seemingly made it their object to have the work as practical as possible, and to lay especial stress on such work as would best fit the pupils for real life.

A number of notes, checks, bills, etc., written by pupils of the highest grade crowned the good work exhibited by this school. The total enrollment of pupils is 247. These are taught by five teachers, the second and third, and the sixth and seventh grades being instructed by one teacher.

Data: Age and number of pupils in all the grades:—

1,	7,	33;
2,	8,	30;
3,	9,	34;
4,	10,	41;
5,	11,	55;
6,	12,	} 54.
7,	13 & 14	}

St. Louis.

A school of this city had exhibited arithmetic papers from five of its seven grades. The number of teachers is seven. Number of pupils taught by one teacher ranges from 45 to 60. The work exhibited reflects credit on the school.

An example of sixth-grade work: Find the interest and amount of $960 at 7% for 1 yr. 9 mo. 24 da.

Analysis:

$960 × .07

$67.20, int. for 1 yr.
$67.20 × $\frac{3}{4}$ = 50.40, int. for 9 mo.
67.20 × $\frac{1}{15}$ = 4.48, int. for 24 da.

$122.08, total interest.
960

$1082.08, amount.

A problem from the third grade read thus: How many yards in 4576 inches? Method of solution: Since in 1 yard there are 36 inches, in 4576 inches there are as many yards as 36 are contained times in 4576 inches, which is $127\frac{4}{36}$ times.

As the given unit of measure is inches, I should suggest that the premise be inverted, thus:

Since 36 inches equal 1 yard, 4576 inches equal as many yards as 36 is contained times in 4576, which is $127\frac{4}{36}$ times.

The solution of an example taken from the seventh-grade papers of another school of this city is noteworthy because of its being very practical and brief.

If 8 men can build a stone wall $200\times12\times3$ ft. working 8 hours a day, in 8 days, how long will it take 10 men to build a wall $250\times10\times2\frac{1}{2}$ feet, working 10 hours a day?

We must first find the cubic contents of both walls:

$200\times12\times3=7200$ cu. ft. | $250\times10\times2\frac{1}{2}=6250$ cu. ft.

8	7200	8	8
10	6250	10	?
8	7200	8	
$1=8\times$	$1=7200\div$	$1=8\times$	
$10=10\div$	$6250=6250\times$	$10=10\div$	

$$\frac{8\times8\times6250\times8}{10\times7200\times10}=4\tfrac{4}{9}\text{ days.}\quad \textit{Ans.}$$

The volumes from several of our *Michigan schools* contained solutions of algebraic problems.

Grand Rapids.

One of the schools of this city displayed very neat work. Among this was the following problem of algebra: If from seven times a certain number twice the number is taken, the remainder will be 60. What number is it?

Analysis:

$7x=$ 1st number.
$2x=$ 2d number.
$7x-2x=60$
$5x=60$
$x=12.$

Solution:

$7x-2x=60$
$7\underline{x}-2x=5x$
$5\underline{x}=60$
$x=60\div\underline{5}=12.$ *Ans.*

Frankenmuth.

The papers from the sixth grade of a school of this village showed the following problem: A lot sold for \$960, which is 20% more than the cost. Find the cost.

Solution:

$x=$ cost
$\$960=x+\frac{1}{5}$
$x+x=\$960$
$5x+x=\$4800$
$6x=\$4800$
$x=\$800.$

Paterson, N. J.

The school at Paterson has an enrollment of 75 pupils, approximately, and is taught by two teachers. The very neat work exhibited by the pupils of all the grades of this school, from the second lowest to the highest, recommends it very highly.

Second Division. Age, 8 years. Number of pupils, 8. Subject: The Four Fundamental Rules applied to numbers below 100.

Third Division. Age, 9 years. Number of pupils, 15. Daily class instruction, 45 minutes. Subject: Four Fundamental Rules applied to numbers not limited by any period.

Fourth Division. Age, 10 years. Number of pupils, 16. Subject: Reduction. (United States Money. Measures.)

Fifth Division. Age, 11 years. Number of pupils, 20. Subject: Common and Decimal Fractions, Reduction (continued); beginning of Interest.

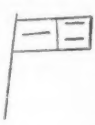
Sixth Division. Age, 12 years. Number of pupils, 12. Subject: Interest, including converse operations.

Seventh Division. Age, 13 years. Pupils, 4. Subject: Profit and Loss, Longitude, Proportion, Triangle, etc.

Leavenworth, Kans.

This school is attended by 128 pupils, who are taught by three teachers. The ages of the children range from 6 to 13 years. The first division contains 23 pupils, and is under the supervision of a female teacher.

As soon as the children are able to draw they are required to illustrate their work with simple drawings, thus:—

My  cost 3 cents, my ○ cost 5 cents, and my ◎ cost 10 cents, which equals 18 cents. 18 cents I have to pay for the flag, ring, and ball.—This affords an excellent opportunity for elementary exercises in language.

The next three divisions number 18, 20, and 19 pupils, respectively, and are taught by a male teacher. The number of pupils in the three highest divisions in their respective order is 18, 20, and 10. These also are taught by a male teacher.

The work of the first division embraces the Four Fundamental Rules, the numbers not exceeding 20. Stress is laid on object teaching.

An example of the second division: A man had $88. He bought a suit for $26, an overcoat for $38, and a watch for $16. How many dollars had he left?—The solution was carried out nicely.

In the third year's class there are 20 pupils, receiving instruction of 15 minutes daily. An example of this year's work: If 6 acres of land cost $72, what will 4 acres cost?

6 | $72	If 6 acres cost $72, then
12	1 acre cost $\frac{1}{6}$ of $72, or $12,
× 4	then 4 acres cost 4 × 12, or
$48	$48.

Here we have both the scientific and mechanical solutions. This stimulates thought and prevents mere mechanical ciphering.

Fourth Year Class. Number of pupils, 19. Age of pupils, 10 and 11 years. The third and fourth year classes are taught by the same teacher.

Fifth Division. Age of pupils, 11 years. Subject work: Common Fractions. The papers on exhibition were neat.

Sixth Division. Age of pupils, 12 years. Subject: United States Money; Common Fractions (continued); Square Measure; Interest. The three highest classes aggregate 48 pupils and are taught by one teacher.

Seventh Division. Number of pupils, 10. Age, 12 and 13 years. Daily class instruction in all classes, 20 minutes.

An example of the work of this class: A flour dealer lost 30% by selling flour at $3.50 a bbl. What percent. would he have gained had he sold it at $5.50 a bbl.?

Solution: 30% loss = $\frac{3}{10}$ of the cost.
$\frac{10}{10}$, the cost, — $\frac{3}{10}$, loss = $\frac{7}{10}$, or selling price.
$\frac{7}{10}$ = $3.50 = selling price of 1 bbl.
$\frac{1}{10}$ = $\frac{1}{7}$ of $3.50 = $ .50.
$\frac{10}{10}$ = 10 × $ .50 = $5.00 = cost of 1 bbl.
$5.00 = 100%, or cost. 50 cts. gain = $\frac{50}{500}$ = $\frac{1}{10}$ of 100%, or 10% gain.

The work of this school is highly commendable; it possesses the essential qualities mentioned in the introduction.

Cleveland, Ohio.

The work of the three Cleveland schools which I investigated reflects credit on teachers and pupils. It had been carefully and neatly prepared.

"Accuracy of expression begets accuracy of thought." The examples of a third grade were all abstract. It is very questionable if this is productive of the best results; for concrete problems require individual thought and develop the powers of reasoning and judgment.—The papers of the two upper grades of another school were characterized by clearness and exceptionally good writing. An example to show method of solution:

The marked price of a bill of dry goods was $2250; but the purchaser was allowed 20, 15, and 5% off. What did he pay for them?

1 St. Fd. net %.

20% = $\frac{1}{5}$	100 % = list.
15% = $\frac{3}{20}$	20 % = 1 disc.
5% = $\frac{1}{20}$	80 % = 1 net %.
	12 % = 2 disc.
	68 % = 2 net %.
	$3\frac{2}{3}$ % = 3 disc.
	$64\frac{3}{5}$ % = final net %.

2 St. Fd. net proceeds.

$2250
$64\frac{3}{5}$ % off

9000
13500
1350

$1453.50, net proceeds.

This method, though lucid, has one objectionable feature in that it is liable to develop large fractions. Let the following problem be an illustration: A man buys a bill of goods amounting to $150. He is allowed a trade discount of 70, 10, $2\frac{1}{2}$ and $2\frac{1}{2}$%. What did he pay for them?

1 St. Fd. net %.

70% = $\frac{7}{10}$	100% = list.
	70% = 1 disc.
	30% = 1 net %.
10% = $\frac{1}{10}$	3% = 2 disc.
	27% = 2 net %.
$2\frac{1}{2}$% = $\frac{1}{40}$	$\frac{27}{40}$% = 3 disc.
	$26\frac{13}{40}$% = 3 net %.
$2\frac{1}{2}$% = $\frac{1}{40}$	$\frac{1053}{1600}$% = 4 disc.
	$25\frac{1067}{1600}$% = net list.

2 St. Fd. net proceeds.

$150.00
$.25\frac{1067}{1600}$

$ 38.50 net list.

The following method is preferable:

Bill of $150 = 100%

70%	disc.	leaves	30%	of	$150.00	= $45.00
10%	"	"	90%	of	45.00	= 40.50
$2\frac{1}{2}$%	"	"	$97\frac{1}{2}$%	of	40.50	= 39.49
$2\frac{1}{2}$%	"	"	$97\frac{1}{2}$%	of	39.49	= 38.50

Net bill: $38.50.

A school in *Indianapolis, Ind.*, exhibited bookkeeping (Journal and Ledger) and stenography. Is that a business college?

Before closing this chapter of the review, I should like to bring to your notice the work of another class of schools, namely, the Lutheran schools for colored children in the South. These are conducted by our missionaries, who, almost unobserved by the world, are doing a great and blessed work among the lowly negroes.

NEW ORLEANS.

The St. Paul congregation has a graded school taught by the minister and two teachers. First year's work could not be found.

Second Grade. Number of pupils, 29. Age, between 8 and 13 years. Subject: The Four Fundamental Rules applied to numbers below 100.

Third Grade. Number of pupils, 19. Age, between 10 and 13 years. Subject: Examples of simple quantity relations.

Fourth Grade. Number of pupils, 12. Age, between 10 and 13 years. An example reads thus: How many cords of wood can be bought for $128.25, at $4.75 per cord? Solution, clear.

Fifth Grade. Number of pupils, 15. Ages, 11 to 13 years. Subject: Reduction.

Sixth Grade. Number of pupils, 8. Subject: Fractions and Percentage.

Seventh Grade. Number of pupils, 4. Age, 12 to 15 years. Subject: Interest, Proportion, Longitude, and Time.

An example of work: Find the principal that will amount to $1092.50, at 6%, in 1 yr. 6 mo. 15 da.

Solution: Interest on $1 for 1 yr. @ 6% = .06
" " " " 6 mo. " = .03
" " " " 15 da. " = .0025
" " " " 1 yr. 6 mo. 15 da. " = .0925
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Eighth Grade. Number of pupils, 2. Age, 14 and 15 years.

The papers of this grade showed examples in algebra; *e. g.*: By adding 46 to a certain number, I obtain as a result a number 3 times as large as the original number. Find the original number.

Solution I:

Let x = original number;
then 3 x = the greater number.
3 x — x = 46
2 x = 46
x = 23, the original number.

Solution II:

Let x = the original number.
3 x = three times the number.
x + 46 = 3 x
— 2 x = — 46
x = 23, the original number.

From the minister's statement the following was extracted:

School is located in poorest quarter of New Orleans. Colored pupils are proverbial for their irregularity and tardiness. Our average attendance for this year has scarcely reached 70% of the enrollment. Home work cannot be given, because many children are compelled to help their parents earn their living. Other parents are too indifferent as to the education of their children. The

poverty among these negroes is so great that many children have not the necessary clothes and shoes to go to school.

Notwithstanding the great difficulties our brethren have to battle with, two of their dusky pupils have ascended to the top rung, to algebra.

"Patience and work change the mulberry leaf into satin."

COMPARISON.

"Comparison gives definiteness and clearness to thought; we can never understand anything well except by comparing it with something else." (J. Clark.) In the rural and ungraded schools, where there are three or more classes in one room, even the strictest economy of time will not permit the teacher to devote adequate attention to the individual pupil. Even if he sees that there has been a step missed somewhere by the child in learning his lesson, he cannot take proper time to determine precisely what it is. Where the ungraded school makes some attempt at classification it is obliged to unite into one class pupils of very different degrees of progress. The consequence is that advanced pupils have not enough work assigned them, being held back to the standard of the average. Hence the investigation of the arithmetical work was for the most part limited to that of the graded schools.

The following diagram shows *the number of pupils in a class or grade.*

Grade.	London.	Milwaukee Public.	Milwaukee Lutheran.	Chicago Lutheran.	Springfield, Mass.	New York Public.	St. Louis Lutheran.	Chicago Public.	Datum-Nienhoefen.
1	—	35	53 (2 div.)	53	Average number, 47.	Average number, 43.	Average number, 57.	Average number, 48.	Mixed school, 50.
2	60	27	64	66					
3	62	33	—	70					
4	58	47	41	70					
5	65 (2 div.)	49	55 (2 div.)	70 (2 div.)					
6	64 (2 div.)	42	54	64					
7	44	35	—	—					
8	30	29	—	—					

While in the case of the public schools the above figures also represent approximately the average number of pupils in all such schools of the respective cities, this does not hold true as regards the Lutheran schools.

Though great efforts have been made in the last few years to reduce the large number of pupils in one room, few of our teachers in cooperation with their ministers have been successful in persuading the congregations that to rear intelligent and useful citizens, well prepared to grasp and retain advantages extended to them, it is not sufficient that our children receive proper instruction in Religion and in German; they must be *thoroughly* educated in all the essentials. If we lose sight of this fact, our schools will suffer seriously, inasmuch as the members of the younger generation want their children to receive an "up-to-date" education, and will send them to a school where they think it can be obtained. It therefore is the duty of our congregations to relieve the congested condition of the rooms, in order that our schools may be able to hold their own and continue to be a medium of growth in the church.

Attendance.

The London school papers gave the following figures as the average percentage of attendance in the respective grades: 80.8, 95.1, 93.4, 98.1, 79.7, 98.2.

It would have been interesting had the attendance of all the schools been given. Since the schoolyear of ordinary length is about 200 days, or 5 days per week for 40 weeks, the pupil that attends regularly for 8 years will receive 1600 days schooling. If he attends but 93 per cent. of this time, he will receive 1488 days schooling, thus losing 112 days. At the rate of 79 per cent. attendance he will receive 1264 days schooling, losing 336 days, which is equal to 1.05 days per week! Is it remarkable, therefore, that at the close of every scholastic year and at graduation there should be a marked difference in the achievements and ability of the pupils?

Percentage of Papers Exhibited by the Few Typical Schools.

Grades.	Milwaukee Public.	Milwaukee Lutheran.	Paterson Public.	Paterson Lutheran	New York Public.	Leavenworth Lutheran.	Chicago Lutheran.
1	85	90	—	—	—	70	77
2	92	96	100	75	95	50	79
3	90	88	94	80	95	60	89
4	53	92	100	93	91	57	57
5	51	100	—	80	86	72	59
6	59	100	92	91	82	70	76
7	43	100	98	100	100	90	92
8	52	—	100	—	100	—	—

Comparison of Grade Work Prescribed by Various Curriculums.

Grade I.—The reader will have seen that in some schools the work of this grade is wholly oral, while in others it is written. Oral and written work should supplement each other, the former receiving special attention. Numerous objects should be used in developing the elementary knowledge of arithmetic.

Grades II and III.—In some instances the work of these grades is almost entirely of a comparative nature. The advocates of this method of teaching believe it to be the best means of developing the faculty of thought in the child, also that "all numbers and their relations are understood by comparing them through their relation to unity. To and from and around the unit, the current of thought flows."

In the third grade *our* schools take up the more advanced work with integral numbers, while some public schools introduce fractions, leaving the other for the next grade.

Grade IV.—Reduction is taught in the fourth grade by all the above-named schools with the exception of that of Springfield. Long division is taught in three of them, common fractions in one of the Lutheran schools. The German school, adding reduction and simple proportion, teaches our third-grade pensum. The Springfield school also teaches, in part, the work of our third grade and introduces angles, areas, and cubic contents.

Many successful educators are of the opinion that reduction of denominate numbers should be taught in the fifth, or sixth grade, when the pupils will grasp it more quickly. It certainly seems a waste of time to spend the *whole* fourth schoolyear on problems of reduction.

Grade V.—The various curriculums are nearly uniform with respect to fifth-grade work, all but two assigning common fractions. Some add simple proportion; others, decimal fractions; still others, reduction of denominate numbers. The Springfield school introduces percentage, interest, cubes, and prisms, while one of the Lutheran schools teaches reduction of denominate numbers and decimal fractions.

Grade VI.—The courses of study of the above-named public schools, also of the London school, prescribe decimal fractions for this grade, while the greater number of the Lutheran schools complete the study of these the previous year. In addition to this, some assign interest, others, mensuration. The Springfield school takes up also multiplication of fractions, profit and loss. In the

London school algebra is introduced as early as the sixth grade. The Lutheran schools, for the most part, teach percentage and interest, some teaching mensuration, others, fractions or reduction, as supplements.

Grade VII. — Mensuration and application of percentage form a part of the seventh-grade work of the greater number of the public schools. A few teach also algebra. The Lutheran schools devote the greater part of their time to application of percentage, longitude and proportion. —

I trust enough has been said to give some idea of the work done in arithmetic in the schools to-day, and also to show that our schools, despite adverse conditions, have, in this branch, reached the standard of the seventh grade of the public schools. Yes, some have introduced algebra and are doing eighth-grade work. True it is, there is still enough room for improvement, especially in matters which are exclusively under the control of the congregations: the creating of smaller classes, and the confirming of the children at a more mature age.

This should be brought more forcibly home to the people by making it the subject of frequent discussions at the meetings of the school-boards and the congregations. For any improvements in this direction will be far-reaching in their effect.

In drawing up the course of study the public school-board takes it for granted that the pupils graduate at the age of 15 or 16 years. And that they do, the present writer has witnessed on various occasions. How much more might be accomplished if we could keep our children to the age of 14 and 15! But many are confirmed at the early age of 12! Therefore it is the exception among our schools that the children have been as *thoroughly* instructed in the essential branches as children of the same grade in the public schools.

And another reason is at once apparent when comparing the curriculums of both schools: our children are instructed not only in the essential branches taught in the public schools, but also in the German language, Catechism, and Bible history, and are required to memorize hymns and Scripture passages. Certainly too many branches to be studied *thoroughly* during 6 or 7 years!

A closing word about our school exhibit at the Louisiana Purchase Exposition. It was not a failure, as some predicted it would be, but was a success in different respects, as has been pointed out by various writers on the subject, and as is proven by the fact that it was awarded the Gold Medal.

And I take the opportunity to say that our success, to a great extent, was due to the ceaseless activity and the skillful management of our Synodical Committee. Therefore we ought to accord those gentlemen our heartiest thanks. Wm. Burhop.

Hiermit schließt auch diese Artikelreihe ab. Sie ist möglich geworden durch die Darbietung einer genügend großen Summe von seiten der Pastoralkonferenz von Chicago, bezw. dortiger Gemeinden, um damit die sechs Verfasser dieser Artikel zwar nicht zu bezahlen — das ist bei uns dermalen nicht Gewohnheit —, wohl aber instand zu setzen, sich eine Zeitlang auf der Ausstellung aufzuhalten, die so nötigen Beobachtungen und Notizen zu sammeln und sich Urteile zu bilden.

Von dem unwiederbringlich dahingesunkenen Welt- und Schulausstellungspanorama, dessen Bild mit der Zeit notwendig immer blasser und nebelhafter werden muß, sind in den erschienenen Aufsätzen einige markante Züge für immer festgehalten, und ihre Betrachtung kann auch noch späterhin für die Gestaltung unsers Schulwesens von Wichtigkeit sein. — Sowohl den Gliedern der genannten Konferenz und ihren Gemeinden oder Vereinen, als auch jenen Verfassern gebührt daher die dankende Anerkennung aller, die es mit unserm christlichen Gemeindeschulwesen wohl meinen.

F. König.

Wieder ein Versuch, Religionsunterricht in die Staatsschulen zu bringen.

In Washington, D. C., hat eine Konferenz verschiedener Kirchengemeinschaften den Versuch gemacht, Religionsunterricht in die öffentlichen Staatsschulen einzuführen. Ein gewisser Dr. Randolph McKim hatte eine Reihe dahinzielender Anträge vorgelegt, die nach der ersten Versammlung einem Komitee überwiesen wurden. Dieser aus fünfzehn Gliedern bestehende Ausschuß hat nun am 15. März seinen Bericht eingereicht, der nach einer hitzigen Debatte endlich nach zwei Stunden mit 40 gegen 22 Stimmen angenommen wurde. Es fand sich, daß alle Presbyterianer, Methodisten, Episkopalen und sogenannten Lutheraner in der Versammlung dafür, Baptisten, Katholiken und Siebententags-Adventisten mit den Juden dagegen gestimmt hatten. In bezug auf den Inhalt der vier angenommenen Beschlüsse wird berichtet:

„Der erste, der sich für völlige Trennung von Kirche und Staat erklärte, behauptete zugleich, daß dies nicht notwendig einen religionslosen Staat oder eine atheistische Erziehung zur Bedingung mache. Er empfahl das Lesen der Bibel und den Gebrauch des Vaterunsers in den öffentlichen Schulen und erklärte es zugleich für recht und billig, daß der Staat Vorkehrungen treffe,

daß die allen Völkern gemeinsamen Grundsätze der Religion und Moral gelehrt werden können.

„Der zweite Beschluß lautete dahin, daß die Grundlage alles rechten Bürgertums auf einer Moral ruhe, die den Glauben an Gott voraussetze, und daß es daher die Pflicht des Staates sei, seinem Schulsystem den Unterricht in solcher Moral einzuverleiben.

„Der dritte befürwortete, wie die 'Religious Education Association' in Boston, einen Auszug aus der Bibel, der von Protestanten, Katholiken und Juden nicht beanstandet werden könne und in den Schulen gelesen werden solle.

„Der vierte Beschluß endlich empfahl, daß die Versammlung bei der Erziehungsbehörde eine Bittschrift einreiche, dahin lautend, daß die Schulbehörde in den öffentlichen Schulen einen systematischen Unterricht in der Moral einführe, der die zehn Gebote und ‚das Gesetz der Gottes- und Nächstenliebe' zur Grundlage habe. Zugleich solle sie Textbücher einführen, in denen die Anwendung dieser Moral gelehrt würde.

„Der heftigste Widerspruch wurde von Herrn Prescott im Namen der Siebententags-Adventisten und von Rabbi Stern im Namen der Juden gegen diesen Komiteebericht erhoben, und obgleich beide zum Komitee gehörten, haben sie doch den Majoritätsbericht nicht unterschrieben. Sie wurden von Dr. Muir, einem Baptisten, und Dr. Kent von der People's Church unterstützt."

Wir Missourier stimmen mit der Minorität, weil diese konsequent ist. Ihre Stellung ist korrekt, wenn auch ihre Motive nicht die rechten sein mögen. Mögen die übrigen noch so viel über Trennung von Kirche und Staat schwatzen, in der Praxis verwerfen sie diese. Selbst wenn sie Bibellesen und den Gebrauch des Vaterunsers in den Staatsschulen durchsetzen würden, so würde doch der bloße Gebrauch der Bibel und das Herbeten des Vaterunsers den Charakter der Schulen nicht im mindesten ändern. — Was für „Lutheraner" mögen das gewesen sein, die der Eingabe beigestimmt haben? L.

Literarisches.

Photographie der Schulausstellung der Synode von Missouri, Ohio u. a. St. auf der Louisiana Purchase Exposition. 1905. Concordia Publishing House, St. Louis, Mo. Größe: 10×14 Zoll. Preis: 75 Cts.

Diese Photographie ist ein wahres Prachtstück und so deutlich, daß sogar kleinere Bilder an den Wänden zu erkennen sind. Die Reproduktionen in unsern Blättern, so gut sie auch geraten sein mögen, lassen sich mit dem Original in keiner Weise vergleichen. Wer eine bleibende Erinnerung an unsere Schulausstellung für sein Studier- oder Schulzimmer haben möchte, der lasse sich dieses Bild vom Concordia Publishing House kommen. — Der Preis ist so niedrig wie möglich gesetzt worden.

F. Rechlin.

Summary of United States History. By *H. B. Fehner*, 9 Ward St., Cleveland, O. Price, single copy 10 cts.; per dozen, 75 cts.

This is a pamphlet of 21 pages containing 568 historical statements, and an appendix enumerating the principal institutions of learning in this country. — The author says: "The following little guide or summary of United States History has been used by me for years with gratifying results. Hitherto, however, it had to be written upon the blackboard, or dictated for the pupils to copy, which is wasteful of the time and energy of both teacher and pupil — to say nothing of the errors that sometimes creep into the pupil's copy. — The 'guide' is not modeled after any particular text-book, but contains gleanings from more than a score of them. It can be used advantageously with any text-book, being possibly still more serviceable where no text-book is used. The 'guide' merely forms a skeleton or center around which historical facts should be clustered. In drilling and reviewing the 'guide' plays a prominent part. If found too brief or too lengthy, it may be easily supplemented or curtailed to meet existing circumstances." — The author is of the firm opinion that oral instruction should precede the use of the *Summary* under all circumstances, to which every experienced teacher will agree. This *Summary* should be in the hands of every student of primary history of the United States, young and old. RN.

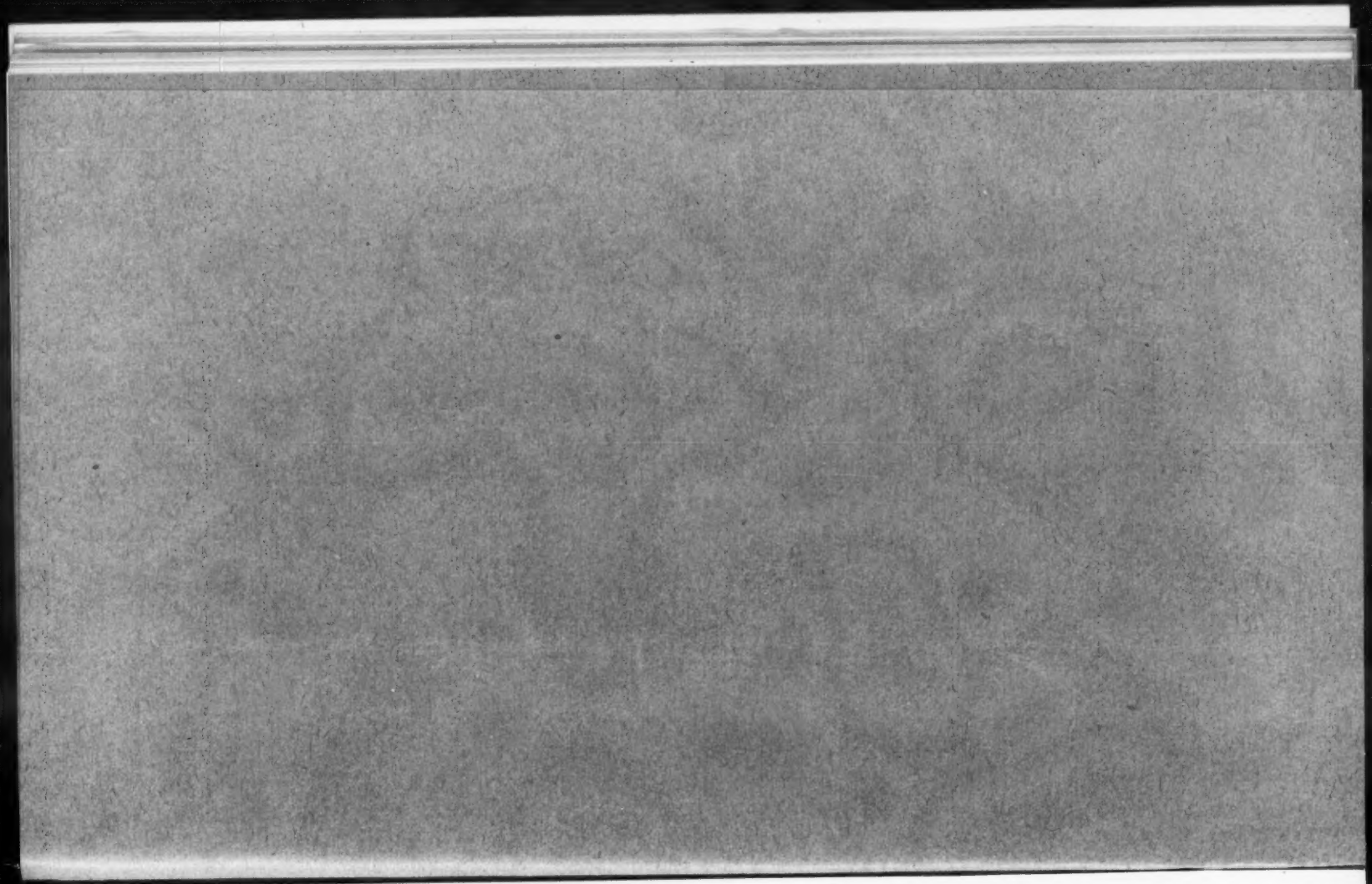
Altes und Neues.

Die "Religious Education Association", welche kürzlich ihre Versammlung in Boston hielt, beabsichtigt eine Sammlung von Bibelsprüchen, die von allen „sektiererischen Tendenzen" frei sind und sich als Lektüre für die öffentlichen Schulen eignen, herauszugeben. Protestanten, Katholiken, Juden und andere sollen das Komitee bilden, das mit dieser Arbeit betraut werden soll. Man hofft die also gesammelten Sprüche ohne Schwierigkeit als Lektüre in die öffentlichen Schulen einführen zu können und auf solche Weise Tausende von Kindern wenigstens mit einem Teil der Bibel bekannt zu machen, von der sie sonst vielleicht gar nichts lernen würden. Ob aus dem Plan der Association überhaupt etwas wird, ist noch sehr fraglich. Uns kommen hierbei die Kinder in den Sinn, die Tag für Tag in Schulen gehen, in denen das ganze Wort Gottes, namentlich auch die Sprüche, welche direkt von Christo, dem Heilande der Sünder, handeln, gelehrt wird. Wie glücklich doch die sind! (Wchsllbl.)

Deutsch lernen in den Schulen der Vereinigten Staaten 815,000 Kinder in Pfarrschulen und 19,817 in Privatschulen. In den öffentlichen Elementarschulen, Hochschulen und Universitäten nehmen 368,000 Schüler am deutschen Unterricht teil. Die Gesamtzahl der Deutsch lernenden Jugend unsers Landes beträgt also mehr als 1,200,000, oder 1,300,000. B.

Das Obergericht der Provinz Ontario, Can., hat entschieden, daß in den katholischen Privatschulen der Dominion nur solche Lehrer unterrichten dürfen, die von der staatlichen Erziehungsbehörde ein Zertifikat der Tüchtigkeit besitzen, also die staatlichen Examina bestanden haben. Natürlich findet dieses auch auf die Lehrer anderer Denominationen Anwendung.

Corrigendum: Auf Seite 67, Zeile 8 von oben, lies statt Wort Gottes, Werk.



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F. Pechlin.

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